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1. *Additional Trypetid Material in the Collection of the South African Museum (Trypetidae, Diptera).*—By H. K. MUNRO, B.Sc., F.E.S.

(With Plate I.)

THROUGH the kindness of Dr. L. Gill, Director of the South African Museum, and of Dr. A. J. Hesse, the Assistant in Charge of Entomology, I have been able to examine all the Trypetid material in the Museum collection. In addition to the material determined by the late Professor M. Bezzi, including some of his types, and published in vol. xix of the Museum Annals in 1924, there are numerous specimens collected subsequently, as well as a certain amount of older material apparently not seen by Professor Bezzi.

The new material was obtained mainly from two localities, the Tradouw Pass in the Swellendam district and the northern part of South-West Africa, by expeditions undertaken by the South African Museum.

It is, perhaps, remarkable that relatively few Trypetidae have been recorded from the south-western districts of the Cape Province. The material collected in the Tradouw Pass is therefore of much interest, although only sixteen species, all belonging to the Trypetinae, are represented.

The greater part of the material, representing forty species, was collected in the northern part of South-West Africa towards the Angola border, in what is known as the Kaokoveld. Practically no Trypetidae have previously been recorded from this area, an area in which the family is evidently well represented. The preponderance

of flower-infesting species (Rhabdochaetinae, Schistopterinae, Trypetinae, and some of the Ceratitinae) over the fruit-infesting species (*Ceratitis*, s. l.) and the cucurb and milkweed infesting Dacinae is noticeable. This is, without doubt, merely a reflection of the composition of the flora of the region.

In spite, however, of the preponderance of the flower-infesting species, a fact usually associated with more temperate regions, the Trypetid fauna of the Kaokoveld is more closely associated with that of Central Africa, more especially with that of Rhodesia, and perhaps the northern and eastern Transvaal, than with the fauna of South Africa proper. At the same time it should be remembered that the country is vast, and that collecting has been done in more or less isolated localities. There is thus scarcely sufficient data on which to make more than very generalised statements as to the distribution and relationships of the Trypetid fauna. That caution must be exercised is shown by the discovery of the European *Trypanea amoena* (Fr.), the curious East African species *Bactropota woodi* Bez., and more especially of the remarkable Egyptian species *Schistopterum moebiusi* Beck., the last a discovery of much importance.

DACINAE.

Tridacus pectoralis (Walker, 1861).

The specimens in the collection are all typical *pectoralis* (Walk.) as recognised by Bezzi. As stated by him in the Annals of the South African Museum (vol. xix, p. 455), *pectoralis* (Walk.) is little more than a form or variation of Bigot's *bivittatus*, if indeed it is not merely a synonym. In specimens of *pectoralis* the infuscation of the lower half of the first posterior cell is often much paler than the broad costal band.

There are a few specimens from M'fongosi, Zululand, April–May 1916, March–May 1917, and January 1923, W. E. Jones, as well as a few specimens from Port St. John's, 1902, Shortridge; Livingstone, 1911, Miss Powell; Kloof, Natal, 8.2.15, Marley; and Mt. Selenda, Melsetter, Rhodesia, 13.3.14. The last-mentioned specimen had been determined as *bivittatus* Big. through the Imperial Bureau of Entomology.

Dacus fuscatus Wiedemann, 1819.

A couple of specimens from M'fongosi, Zululand, February–March, 1917, W. E. Jones; and from Howick, Natal, J. Cregoe; and one from

Hex River, 7th January 1884. The last specimen is labelled *Dacus rufipes* Bigot, probably an unpublished manuscript name.

Dacus brevistriga Walker, 1861.

There are a couple of specimens from M'fongosi, Zululand, December 1911, W. E. Jones ; one from Kloof, Natal, 8.2.15, Marley ; and a few from Dunbrody, Cape (no date).

Dacus brevistylus Bezzi, 1908.

In addition to the material already recorded by Bezzi in 1924 (Ann. S.A. Mus., vol. xix, p. 462) there are sundry odd specimens as follows : Walvis Bay, 1888, Wilmer ; Durban, 1891, Hunt ; Seymour, C.P., February 1891 ; Estcourt, Natal, 1894, E. Haviland ; Smithfield, O.F.S., 1908-1910, Kannemeyer ; van Wyk's Vlei, C.P., April 1910 ; Inhaca, Lourenço Marques, October 1912, K. H. Barnard ; East London, July 1914, E. Lightfoot ; Potchefstroom, T. Ayres ; Salisbury, Southern Rhodesia, D. Dodds ; numerous specimens were also collected by the Museum Expedition in South-West Africa from January to March 1925 at Zesfontein, Otjikondo, Kaoko Otavi, and Zandfontein.

Dacus vertebratus Bezzi, 1908.

In addition to the material already recorded by Bezzi in 1924 (Ann. S.A. Mus., vol. xix, p. 462) there are odd specimens from van Wyk's Vlei, 30.4.86, S. G. Alton ; Vryburg, June 1914 ; M'fongosi, Zululand, February 1915, W. E. Jones ; Gaub, S.W.A., December 1919, R. W. E. Tucker ; Howick, Natal ; and several specimens collected by the Museum Expedition to South-West Africa in January to March 1925 at Zesfontein and Otjikondo.

Dacus binotatus Loew, 1862.

Of this species there are a few specimens : Bathurst, Cape, 1898, "on wings" ; Howick, Natal, J. Cregoe ; M'fongosi, Zululand, May 1917 and February 1923, W. E. Jones ; and Zesfontein, S.W.A., February 1925, Mus. Exp.

Dacus immaculatus Coquillett, 1901.

There is a specimen from Howick, Natal, J. Cregoe, and one from Willowmore, Cape, 6.1.17.

Dacus oleae Gmelin, 1788.

There are two specimens of this species from the collection of the Cape Entomologist, Department of Agriculture, Cape Town.

Dacus rufus Bezzi, 1915.

Of this species there is a single faded specimen from Cape Town, April 1916, L. Péringuey, not previously recorded.

CERATITINAE.

Pterandrus rosa (Karsch, 1887).

A couple of females from M'fongosi, Zululand, February 1917, W. E. Jones, and another specimen from Port Shepstone, January 1915, Marley.

Pardalaspis melanaspis Bezzi, 1920.

A single female specimen from Zesfontein, S.W.A., February 1925, Mus. Exp.

Pardalaspis cosyra (Walker, 1849).

Three specimens labelled "Bred from wild plum, *Spondias* sp., Victoria Falls."

Pardalaspis giffardi Bezzi, 1912.

Of this species there are a few specimens from Umtali, Rhodesia, 6.9.15, with the number 749. They were probably received from the Department of Agriculture, Salisbury, Rhodesia.

Pardalaspis quinaria Bezzi, 1918.

Of this Rhodesian species there is a single female from Zesfontein, S.W.A., February 1925, Mus. Exp.

Pardalaspis aliena Bezzi, 1920.

There is a single damaged female labelled "S.W. Distr., Cape Colony."

RHACOCOLAENA Loew, 1862.

In the original description of this genus the chaetotaxy is not detailed, but in his table on page 76 of vol. xv of the Bulletin of Ento-

mological Research (1924) Bezzi states "no prst. and no oc." With regard to the ocellar bristles, however, I have to record that in all the species examined by me, namely, *pulchella* Bez., *fasciolata* Lw., *major* Bez., and *permagna* n. sp., these bristles are present. They are minute and of hair-like proportions, but, nevertheless, from their well-defined and constant position in each species, they are undoubtedly the ocellar bristles.

Rhacoclaena permagna n. sp.

(Plate I, fig. 1, wing.)

A large robust species allied to *major* Bez., from which it differs chiefly in the wing pattern.

♂. Length of body, 7.5 mm.; of wing, 6.2 mm. Occiput yellowish, with restricted, black, shining patches touching upper corners of eyes; eyes rounded—from a relaxed specimen they appear to be, in life, shining green with two broad, longitudinal, transverse bands of a dull reddish colour, the one above, the other below the line of the base of the antennae; frons yellow, blackish across the middle with a few short black hairs; ocellar dot black; face concave, whitish yellow, broadly infuscated with brown along the mouth border; antennae as long as the face, dark yellow; arista rather long plumose; palpi and proboscis yellow; bristles black; three inferior orbitals; ocellars very small but distinct.

Thorax and scutellum dark brownish; on dorsum with blackish sub-median and sub-lateral stripes and a median white stripe on posterior two-thirds and across scutellum—the stripe is pointed anteriorly, widening to the scutellum; some rather sparse whitish dust on anterior part of thorax; on either side is a strong, shining white notopleural stripe from whitish humerus to black mesophragma; bristles black; two mesopleurals; dorso-centrals behind line of anterior supra-alars. Scutellum with four bristles.

Legs dark yellow with black bristles and black pubescence. Halteres yellow. Wings with upper cross-vein slightly before middle of discoidal cell, and three times its length from the lower cross-vein; stigma brown; no basal streak; a well-defined brown band from outer half of stigma, across upper cross-vein, slantingly across discoidal cell and into third posterior cell, where it becomes lighter and more diffused, but is very faintly connected along hind margin of wing with terminal band; terminal band broad, covering end of marginal cell, outer half of sub-marginal, almost outer two-thirds of first

posterior, end of discoidal, whole of second posterior, and apex of third posterior cells; at the tip of the marginal cell is a tiny whitish dot; at the end of the first posterior cell is the characteristic apical whitish spot, and in the second posterior cell a broad, rounded indentation; between the two bands described is a short, narrow band from the costa crossing the marginal and submarginal cells. The anal cell is drawn out into a sharp point; the third vein is bristly along its whole length.

Abdomen shining black with a broad yellow median stripe except on last segment; pubescence blackish; there is a terminal fringe of black bristles on last segment; genitalia black with elongate yellow appendages.

♀. Total length, 9.6 mm.; of wing, 6.3 mm.; of ovipositor, 2.6 mm. The median yellow stripe on the abdomen does not extend on to the last two segments; ovipositor elongate, flask-shaped, black, two-thirds length of abdomen; pubescence black.

Types ♂ and ♀ and an additional ♂ from M'fongosi, Zululand, W. E. Jones (no date).

Afrocneros mundus (Loew, 1863).

One specimen from Willowvale, C.P., 6.11.17.

Coelotrypes vittatus Bezzi, 1924.

The undescribed male is similar to the female.

There are several specimens from Zesfontein and Kamanyab, S.W.A., February 1925, Mus. Exp., and a male from Nyaka, P.E.A., R. F. Lawrence.

The species is also recorded from the Congo and from Madagascar.

TERELLIA Robineau-Desvoidy, 1830.

This is a genus that requires revision and comparison with European forms; as interpreted here it seems well represented in the Ethiopian Region. The inclusion, however, of species with banded (*Sitarea* R.D.) and species with unbanded wings does not seem satisfactory unless supported by anatomical characters. The generic relationships, too, merit attention; one species in particular, *Terellia australis* Bez. (described as a variety of *Terellia planicsutellata* Beck.) seems to be more related to *Acanthiophilus helianthoides* Bez. than to *Terellia taeniaptera* Bez.

The Ethiopian species may be distinguished as follows:—

1. (6) Wings with dark bands.
2. (3) Wings with two forked dark bands and without isolated spots; antennae and legs blackish; bristles of head and thorax black. *hysia* Walk.
3. (2) Wings with unforked bands and isolated spots.
4. (5) Antennae and legs entirely pale yellowish. . . . *taeniaptera* Bez.
5. (4) Antennae dark brown and all femora mainly black *nigrofemorata* n. sp.
6. (1) Wings quite hyaline or more or less distinctly, though faintly, spotted.
7. (10) Wings with faint, but generally distinct, spots towards apex (very seldom quite absent).
8. (9) Larger species (3.5-4 mm.), with milky wings and more pronounced and definite spotting towards apex. . . . *australis* Bez.
9. (8) Smaller species (2.5 mm.), with less milky wings and more restricted spotting towards apex; eyes large and rounded; frontal bristles yellow. . . . *xanthochaeta*, n. sp.
10. (7) Wings quite unspotted; head much shortened. . . . *complanata*, n. sp.

Terellia nigrofemorata, n. sp.

(Plate I, fig. 2, wing.)

♀. Length of body, 3.7 mm.; of wing, 3.7 mm. The specimen is rather greasy and is probably darker than is normal.

Head dark, rather blackish brown; mouth rather small, and epistome somewhat prominent; proboscis short, labellae large, flexed backwards; palpi thin, flat, leaf-like, yellowish; face flat; antennae not as long as face, dark brownish, upper side of third joint shortened so that the apex is distinctly up-turned; arista brownish, microscopically pubescent; frons slightly longer than wide, rather sunken in centre in specimen; bristles black, three inferior orbitals; ocellar dot blackish; lunule sunken in specimen; occiput blackish centrally, brownish peripherally; occipital bristles whitish, with a row of black setulae on either side.

Thorax entirely dull black, except humeri, base of wings and somewhat between, yellowish; white pubescence and rather pale blackish bristles; dorso-central bristles rather before line of anterior supra-alars. Scutellum black centrally at base, yellow peripherally; with four bristles, the apicals rather the shorter. (It may be noted here that the thorax and scutellum are probably normally clothed with thick grey dust.)

Legs with coxae yellowish, femora black with yellow tips; the front pair, which are more yellow on the inner side, have a row of long brownish bristles behind, two rows of shorter, lighter spines in front, and some thick white pubescence between; other femora with short black pubescence; tibiae and tarsi yellow.

Wings with base hyaline; stigma black, with a milky spot on basal half; veins yellowish hyaline, but darker where touching spots or bands, of which there are the following: Humeral cross-vein slightly darkened with a faint spot on its outer side; a blackish band from stigma to base of third posterior cell, just entering the axillary cell; a band from the end of the marginal cell, which it fills, to hind border of wing, covering the lower cross-vein, but not quite filling the extreme lower corner of third posterior cell; between these two bands are a few spots—a narrow spot across the marginal cell about half-way between; and another below the end of the stigma; the anterior cross-vein is infuscated; in the third posterior cell is an inverted club-shaped spot hanging on the fifth vein; and a spot almost on the wing margin below the end of the sixth vein; at the apex of the wing is a broad spot filling the end of the submarginal cell, extending across the first posterior cell nearly to fourth vein, but not filling the end of the cell. Upper cross-vein beyond middle of discoidal cell and one and a half times its length from lower cross-vein, which is upright with a slight outward curve; lower angle of anal cell acute but not definitely pointed.

Abdomen—in specimen—dull black, but probably normally clothed with white or grey dust; pubescence white; ovipositor dull black, short, not as long as last two segments.

Type a single female specimen from Kaross, S.W.A., February 1825, Mus. Exp.

Terellia australis Bezzi, 1924.

Bez., Ann. S.A. Mus., vol. xix, p. 508, pl. xiv, fig. 53 (1924), as var. of *Terellia planiscutellata* Beck.

As will be recorded by me in a forthcoming paper, I now regard this as a distinct species as the wing is typically spotted towards the apex.

Specimens from South-West Africa were collected at Zesfontein and Warmbad, February 1925, and at Kaoko Otavi, March 1926, Mus. Exp.

Terellia xanthochaeta n. sp.

(Plate I, fig. 3.)

♂♀. Length of body, 2.5 mm.; of wing, 2.5 mm.; of ovipositor, 0.4 mm. Head and all appendages and bristles yellow; head subquadrate; eyes large, rounded-oval, with longer axis directed backwards; mouth broadly elliptical, large, mouth border hardly prominent; proboscis

short; palpi short, beset with strong yellow bristles; face rather narrow and slightly hollowed; antennae short, half the length of the face, third joint about half as long again as broad; arista with thickened basal fourth and terminal thinner portion brownish and bare; frons rather prominent in front, with parallel sides, flat, not quite twice as long as broad (10:6); three inferior orbitals, lower superior orbital brownish, as are also ocellars and post-vertexals; ocellar dot greyish; lunule yellow; occiput with slight blackish tinge on sides, swollen below; occipital bristles translucent yellow, thick.

Thorax black, clothed with rather thin greyish dust; humeri and base of wings yellowish; rather long white pubescence; bristles on dorsum brownish; dorso-centrals before line of anterior supra-alars; posterior notopleurals short, thick, and yellow; mesopleurals, pteropleurals, and sternopleurals also yellow, but longer. Scutellum flat, black, paler on margins; with two long brownish bristles; with grey dust and white pubescence. Halteres brownish yellow. Legs brownish yellow, middle tibiae with strong brown spur.

Wings narrow; upper cross-vein sloping slightly outwards, lower cross-vein straight or with slight outward curve and directed inwards; upper cross-vein one and a half times its length from the lower; third and fourth veins parallel, slightly divergent at extreme tips. Wings hyaline, except slight infuscation near apex, on either side of upper cross-vein, and slight spots at ends of marginal and submarginal cells and along length of first posterior cell. In some specimens the markings are practically invisible, in some others they form an almost reticulate pattern, while in all they are very faint, except in a few in which they are rather darker; two costal bristles; veins straw-coloured.

Abdomen black with rather slight grey dust and rather long, thick, yellow pubescence; hind margins of segments narrowly yellowish; male genitalia brownish; ovipositor as long as last two segments, shining brownish-yellow, subtranslucent, with yellow pubescence.

Type ♂ and ♀ and numerous other specimens from Kamanyab, and a few from Kaross, Warmbad, and Otjikondo in South-West Africa, January and February 1925, Mus. Exp.

Terellia complanata n. sp.

(Plate I, fig. 4, wing.)

♂♀. Length of body, 2.8 to 3.2 mm.; of wing, 2.6 to 3.1 mm.; of ovipositor 0.7 mm. Head yellow, wider than high, shortened, the length rather more than half the width (15:27); eyes correspond-

L. Péringuey. The latter has the legs reddish as in typical *haematopoda*, but the ovipositor is about twice as long as the body. Two females from South-West Africa (Kamanyab, March 1925, and Otjikondo, January 1925, Mus. Exp.) have the ovipositor short as usual, but of a reddish colour. A male from M'fongosi, Zululand, May 1917, W. E. Jones, and another from Potchefstroom, T. Ayres, have the legs rather blacker than in typical *haematopoda*, but not quite as black as in *tetrachaeta*.

Aciura tetrachaeta Bezzi, 1918, var. *interrupta*, var. nov.

Under this variety is placed a series of specimens which differ from both *tetrachaeta* and *haematopoda* in having the basal costal line broken for a short distance before reaching the stigma, while the legs are reddish as in *haematopoda*. There is a male specimen from Henkries, Bushmanland, November 1911, Lightfoot; three females (Dunedin, Musto; Steynsburg, Cape, April 1914, Lightfoot; and Jackalswater, Bushmanland, Lightfoot) have the ovipositor longer than the abdomen, as in *tetrachaeta*, while a female from Komatipoort, November 1925, R. W. Tucker, has a short ovipositor.

With the available material it is not possible to estimate the exact status of these three forms (*tetrachaeta* Bez., *haematopoda* Bez., and *interrupta* var. n.); the examination of a large series of specimens from various localities, especially in regard to the coloration and the length of the ovipositor, would be necessary.

Aciura angusta Loew, 1861.

There are two females from Kaoko Otavi, S.W.A., March 1926, Mus. Exp., and another from M'fongosi, Zululand, W. E. Jones.

Aciura perpicillaris Bezzi, 1920.

A Central African species; there are some specimens from Mulange, Uganda, November–December 1922, R. Dummer.

SPHENISCOMYIA Bezzi, 1913.

While accepting Bezzi's definition of this genus given on page 123 of vol. xv of the Bulletin of Entomological Research (1924), it is not possible to form an opinion on the validity of Hendel's *Metasphenisca* without an examination of specimens of a species actually placed in the last-named genus. Bezzi seems to consider *quaternaria* Bez., *senaria* Bez., and *quinaria* Bez. as belonging to *Metasphenisca*,

separating them on account of the whitish bristles on the occipital border. This division, however, as seen in Bezzi's table of the species of *Spheniscomyia*, quite erroneously separates *binaria* Lw. from the three species mentioned; the four undoubtedly belong to the same group, and may even be little more than variations of one species—*senaria* Bez., in particular, seems little more than a variety of *binaria* Lw. From an examination of a large series of specimens of *binaria*, *quaternaria*, and *quinaria*, the most that can be said is that in the two latter the occipital bristles have a tendency to be whitish. A revised table of the Ethiopian species follows:—

1. (6) Scutellum with four bristles.
2. (3) Wings with a single hyaline indentation on fore border; the four hyaline indentations on hind border broad and not in pairs
sexmaculata Macq.
3. (2) Wings with two approximated hyaline indentations on fore border; the four posterior indentations short and paired.
4. (5) Three rounded hyaline spots in middle of wing; external posterior indentation not longer than anterior one, and ending at fourth vein
ternaria Lw.
5. (4) No hyaline discal spots; the external posterior indentation longer, extending into submarginal cell *capensis* Rond.
6. (1) Scutellum with two bristles.
7. (8) Only one hyaline indentation on fore border and two on hind border; three hyaline discal spots; base of wing black; halteres black
compacta Bez.
8. (7) Two hyaline indentations (or spots) on fore border; four or more on hind border; base of wing hyaline; one or more hyaline discal spots; halteres whitish.
9. (10) Wings with two regular hyaline indentations on fore border; four, paired, indentations on hind border; only one hyaline spot at base of discoidal cell *neavei* Bez.
10. (9) Two irregular hyaline spots on fore border.
11. (12) Femora entirely yellow; hyaline indentations on fore border about equal in size, *i.e.* both extend into submarginal cell *quinaria* Bez.
12. (11) Femora black; outer hyaline indentation on fore border smaller and not extending into submarginal cell.
13. (16) Hyaline indentations on hind border not fused with discal spots except that at outer end of discoidal cell.
14. (15) Hind border of wing mainly hyaline with only one or rarely two rays to hind margin *binaria*, Lw.
15. (14) Hind border with three rays to hind margin; first posterior cell with a single basal hyaline spot *senaria* Bez.
16. (13) Hind border with three rays to hind margin; hyaline indentations long and broad, and fused with hyaline spots at base of first posterior cell and in the discoidal cell; first posterior cell typically with two hyaline spots *quaternaria* Bez.

Spheniscomyia sexmaculata (Macquart, 1843).

There are several specimens of this widespread species from Warmbad, Zesfontein, Kaoko Otavi, and Kaross in S.W.A., January to March 1925, Mus. Exp.

Spheniscomyia binaria (Loew, 1861).

There are a few specimens from Kaoko Otavi, March 1926, Mus. Exp. They are all typical, having only one ray to the hind margin of the wing.

Spheniscomyia senaria Bezzi, 1924.

Two specimens from Zesfontein, S.W.A., February 1925, and two from Warmbad, S.W.A., February 1925, Mus. Exp., appear to be this species.

Up to the present time the full description of this species does not seem to have been published; the only reference is in Bezzi's table of the species of *Spheniscomyia* on page 124 of vol. xv (1924) of the Bulletin of Entomological Research, and the locality reference (Uganda) on page 125.

SCHISTOPTERINAE.

Schistopteron moebiusi Becker, 1903.

There are a few specimens of this species from the Hoarusib River (Otshu), S.W.A., March 1926, Mus. Exp.

This record is of interest and importance as the species has only been recorded from Egypt. Efflatoun (Mem. Soc. Royale Ent. d'Égypte, vol. ii, fasc. 2, pp. 72-74 (1924)) states that it is common in Lower Egypt.

Bactropota woodi Bezzi, 1924.

Of this curious and interesting fly there are a couple of female specimens from the Hoarusib River (Otshu), S.W.A., March 1926, Mus. Exp.

RHABDOCHAETINAE.

Rhabdochaeta nigra Bezzi, 1924, var. *anteroflava*, var. nov.

♂♀. This form closely resembles *Rhabdochaeta nigra* Bez., but differs in having all the coxae and the front femora yellow, except that on the latter there is a blackish antero-lateral spot of greater or

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The locality Warmbad does not refer to the well known Warmbad in the south of South West Africa, but to a small native village about 10 miles S.E. of Sesfontein in the Kaokoveld. See map in vol. XXV. p. 218.

THE HISTORY OF THE UNITED STATES OF AMERICA

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less extent near its distal end. The third antennal joint is not so dark, nor the distal half of the palpi so black.

There are numerous specimens from Warmbad, S.W.A., February 1925, Mus. Exp.

It may be noted here that the form recorded as *Rhabdochaeta nigra* Bez., by the author in Entomology Memoir No. V (Department of Agriculture, Union of South Africa), page 36, proves to be this same variety.

Rhynchmopterum munroi Bezzi, 1924, var. *major* Bezzi, 1926.

There is a single, rather damaged, male from Kaoko Otavi, S.W.A., March 1926, Mus. Exp.

TRYPETINAE.

Platomma luniferum (Loew, 1861).

Specimens of both sexes from Kaross, February 1925, and from Kamanyab, March 1925, Mus. Exp.

The male is similar to the female, but the abdomen is rather more rusty red, especially the last segment; the genitalia are also rusty red.

Elaphromyia adatha (Walker, 1849).

Of this widespread species there are specimens from Mulange, Uganda, November 1922, R. Dummer; M'fongosi, Zululand, May 1917, W. E. Jones, and Warmbad, S.W.A., February 1925, Mus. Exp.

LEUCOTHRIX, gen. nov.

Allied to *Afreutreta* Bez. and *Platomma* Bez., but distinct owing to the shape of the head and the length of the antennae. Shining black species with thickened white pubescence on most parts of the body.

Head short; occiput concave above, rather swollen below; mouth opening narrowed, epistome thin and somewhat produced; proboscis short and thick with large flattened labellae; palpi large, flat, and broad; face long, narrowed, and concave in the middle, with a large rounded tubercle below base of antennae; frons flat, as long as wide; antennae long, second joint as long as third, the two together equal to the length of the longer diameter of the eye; lunule distinct but closely approximated to base of antennae; ocellar bristles small and

white ; thickened white pubescence covering lower parts of head and sides of face and of frons.

Thorax as long as wide, convex ; black, with faint whitish dust and thickened white pubescence ; dorso-centrals slightly before line of anterior supra-alars. Legs normal ; middle tibiae with one long and two or three shorter apical bristles. Wings relatively short and broad ; venation much like that of *Platomma* Bez. Stigma of medium length ; discoidal cell long and broad, extending beyond middle of wing ; lower angle of anal cell rather blunt and slightly produced ; basal cross-vein much attenuated just before reaching fourth vein ; anterior cross-vein short, slightly before outer third of discoidal cell and about four times its length from lower cross-vein ; lower cross-vein about as long as distance between it and upper cross-vein—almost perpendicular with a slight outward curve ; fifth vein not reaching the wing margin.

Abdomen rather broad, as long as thorax in male, shorter (not including ovipositor) in female ; ovipositor as long as abdomen, wide cone-shaped.

Genotype the following new species.

Leucothrix barbata, n. sp.

(Plate I, fig. 6, wing.)

A black species with thickened white pubescence, peculiarly shaped head, long antennae, and characteristic wing pattern.

♂. Length of body, 3.5 mm. ; of wing, 2.6 mm. Head black, shortened, and eyes lengthened perpendicularly ; occiput concave above, swollen below ; mouth rather elongate oval, epistome with thin margins and somewhat produced snout-like ; proboscis brownish black, thick and short, with large labellae much compressed laterally ; palpi brownish black, flattened, broad, wider distally with rounded corners ; face shining black, long, narrowed, narrower in middle, and hollowed between epistome and large rounded tubercle below base of antennae ; parafacials wide, but narrowed in middle ; antennae separated at base by rather more than width of second joint, blackish brown, third joint almost quite black, long ; second joint as long as first, the two together as long as the longer diameter of the eye, and pendant from the first joint, which is one-fourth the length of the second ; second joint cylindrical with short black setulae ; third joint linear, somewhat flattened, rounded at apex, and more black on

apical half ; arista pale brown, hardly longer than third joint, minutely pubescent, basal fourth thickened ; frons flat, with parallel sides, as long as wide ; lunule close to base of antennae ; chaetotaxy as follows : three inferior orbitals, the lowest slightly below line of the base of antennae, long, thin and brownish ; lower superior orbital long, thin, and brownish, upper short, thick, and white ; ocellars very short, hair-like, white ; inner verticals long, thin, and brownish, the outer short and white ; the few occipitals short, thick, and white, while on either side of upper portion of occipital margin is also a row of black setulae ; the lower half of the occiput, the genae and parafacials and sides of face and frons densely clothed with thickened white pubescence, which is long on the lower parts of the head ; the centre of the face is bare, but on the centre of the frons is some scattered white pubescence ; round the base of the eye, widening behind, is a streak free of white pubescence but clothed with shining silvery dust.

Thorax as long as wide, shining black with faint whitish dust which is thicker on sides, and rather long but not very dense white pubescence. Chaetotaxy normal ; dorso-centrals slightly before line of anterior supra-alars ; mesophragma black ; scutellum black, large, one-third length of thorax, flat, broadly rounded behind ; faint white dust and white pubescence as on thorax ; four brownish bristles of about equal length. Legs black with brownish tinge ; all tarsi pale brown ; halteres blackish ; alulae white. Wings relatively short and broad ; venation much as in *Platomma luniferum* (Lw.). Stigma of medium length ; second vein straight ; third vein undulating on outer half, reaching margin well before apex of wing ; fourth vein ending at apex of wing ; discoidal cell long and broad ; anterior cross-vein short and about four times its length from lower cross-vein ; lower cross-vein about as long as distance between it and the upper cross-vein, almost perpendicular with a slight outward curve ; anal cell drawn out into a rather blunt, slightly produced point ; basal cross-vein much attenuated just before meeting fourth vein. The wing pattern is in the form of a broad band from the base of the wing, filling the space between the costa and the fourth vein, towards the apex of the wing, then turning round sharply towards the base of the wing, fading somewhat and not actually reaching the base ; around the apex of the wing, from, or just before, the end of the third vein, is a large, lunate, whitish-hyaline area, which extends below narrowly and irregularly along the posterior margin ; the inner half of the discoidal cell and the basal cells are also whitish-hyaline ; the anterior portion of the band is brown and has numerous small,

whitish-hyaline spots; around the bend the spots become larger and the colour less intense, while on the posterior portion of the band the spots are so large as to make it broadly reticulate. The veins are brownish, except the whitish terminal part of the fourth vein in the apical lunate area. The microtrichiae are black on the brown parts of the wing, white elsewhere, but the hind marginal fringe is blackish.

♀. The single female specimen (of which the head is missing) is similar to the male. The abdomen (not including the ovipositor) is not quite as long as the thorax; the ovipositor, 1.5 mm. in length, is as long as the abdomen, shining black, with black pubescence, wide cone-shaped, being wide at the base and tapering gradually.

Type ♂ and ♀ and two other ♂♂ from Kamanyab, S.W.A., March 1925, Mus. Exp.

Euaresta striatifrons Mro, var. *oblita*, var. nov.

There is a single female from Zesfontein, S.W.A., February 1925, Mus. Exp., which is described here as a variety of a new species, *Euaresta striatifrons*, to be described elsewhere.*

It agrees with *striatifrons* in wing pattern and in the well-defined striation on the dorsum of the thorax, but differs in the absence of striation on the frons, which is yellow. The examination of additional material may prove this to be a distinct species.

Spathulina semiatra (Loew, 1861), var. *semirufa* Bezzi, 1924.

(Plate I, fig. 7, wing.)

Of this form there is a typical specimen from Nyaka, P.E.A., February 1924, R. F. Lawrence. A couple of specimens from Kaoko Otavi, S.W.A., March 1926, Mus. Exp., have the spots on the wings somewhat enlarged, and they are, in fact, intermediate between *semirufa* and the following new variety. The figure of the wing of *semirufa* is given for comparison.

Spathulina semiatra (Loew, 1861), var. *superhyalina*, var. nov.

(Plate I, fig. 8, wing.)

While *Spathulina semiatra* (Lw.) and the variety *semirufa* Bez. agree in having predominantly black wings, this new variety differs in having the black pattern so reduced that the wings are mainly hyaline; the reduction of the black being effected by the increase in size and the coalescence of the hyaline spots. Further, Loew (Berl.

* Under a new genus, *Insizwa*, in a forthcoming number of the Bulletin of Entomological Research.

Ent. Zeitschr., vol. v, p. 276, pl. ii, fig. 12 (1861)) founded his species *semiatra* on a single female, and he describes the abdomen as "shining black." As recorded by Bezzi, and in all the specimens seen by me, the abdomen in both sexes of *semirufa* Bez. is more or less reddish at the base, more so perhaps in the males than in the females. In this new variety, however, the males only have the abdomen reddish, while in the females the abdomen is shining black. Whether or not the greater reddishness of the abdomen in the male of these forms is to be regarded as a sexual character cannot be decided without a greater series of specimens, and at least not until authentic specimens of males corresponding to Loew's female have been examined.

In the wing pattern the hyaline spots and indentations occupy corresponding positions to those in the typical "black" wing. The base of the wing is hyaline; stigma black; two large hyaline spots occupy most of the marginal cell, the outer being broadly confluent with the inner of the two large hyaline spots in the submarginal cell. In the first posterior cell are three spots, the inner above the upper cross-vein but not touching any vein, a median one touching the fourth vein, and a large terminal spot that reaches from the vein above to the one below; the three spots in the second posterior cell are all confluent, only a portion of the division between the lower two remaining; these three confluent spots are also more or less confluent with the spot on the fourth vein in the first posterior cell. The confluent spots in the second basal and the discoidal cells are very large, occupying most of the cells; there is also a relatively small spot (sometimes absent) at the outer end of the discoidal cell. The three large indentations in the third posterior and the axillary cells cover most of the area concerned, and are more or less confluent with one another.

Type ♂ and other specimens from Kamanyab, S.W.A., March 1925, Mus. Exp.; type ♀ from Otjikondo, and a specimen from Kaoko Otavi, S.W.A., March 1926, Mus. Exp.

Spathulina péringueyi Bezzi, 1924.

One female specimen from Tradouw Pass, Swellendam district, Cape, November 1925, Mus. Exp.

Spathulina arcucineta Bezzi, 1924.

The type is a very poorly preserved specimen minus the third antennal joint and the abdomen. There are a few specimens from

Tradouw Pass, Swellendam, November 1925, Mus. Exp., and one from Great Winterhoek, Tulbagh, November 1916, R. M. Lightfoot. The locality of the type is Kraaifontein, Cape—not Kleinfontein.

The following additional descriptive notes are given :—

♂♀. Antennae rather darker yellow than the head, nearly as long as the face, third joint with angular upper corner. Dorsum of thorax with opaque grey dust on which may be seen, especially when viewed rather obliquely from behind, three longitudinal blackish stripes; the median short stripe reaches only to the middle of the thorax, the two outer, on the lines of the dorso-central bristles, widen and become indistinct towards the scutellum; the stripes are more distinct in some specimens than in others; pubescence white. Halteres whitish. Wings with two small costal bristles. The hyaline spots and indentations of the wing pattern vary somewhat as shown in the table (p. 21).

The abdomen in both sexes is shining black, with black pubescence. The shining black ovipositor is rather narrow and slightly longer than the last two segments.

Spathulina elegantula Bezzi, 1924.

A small series of specimens from Tradouw Pass, Swellendam, November 1925, Mus. Exp., and one from Langebergen, Swellendam, 3000–5000 ft., October 1925, K. H. Barnard, agree well with the type specimen. Another specimen, however, from Tradouw Pass, has an additional narrow indentation in the second posterior cell between the normal two. The male is similar to the female.

It may be noted that in this, and in the variety *diminuta* Bez., there is a distinct “apical fork” in the wing pattern.

Spathulina elegantula Bezzi, 1924, var. *diminuta* Bezzi, 1924.

A few specimens from Tradouw Pass, November 1925, Mus. Exp.; from Matroosberg, Ceres, 3500 ft., November 1917, Lightfoot; and from Great Winterhoek, Tulbagh, November 1916, Lightfoot, agree with the type specimen.

ENSINA Robineau-Desvoidy, 1830.

This genus is becoming more and more unwieldy owing to the number and variety of species included in it. In the present paper the wider interpretation employed by Bezzi is followed, as it seems

Table of Variations in SPATHULINA ARCUCINCTA Bez.

Type.	Smaller, outer spot in marginal cell.	Spots at ends of submarg. and 1st post. cells.	Spot at end of 3rd vein in submarg. cell.	Spot in 1st post. cell on 4th vein, opposite outer indent. in 2nd post. cell.	Smaller, outer indent. in 2nd post. cell.
A.	Present.	Narrow, confluent, forming together arcuate band.	Absent.	Absent.	Present.
B.	Small.	Larger and each more arcuate in itself, but still touching.	Absent.	Absent.	Present.
C.	Present.	Still larger, but while still touching there is between them a small, isolated, triangular spot at end of third vein.	A small spot present.	A small round spot touching inner end of lengthened outer spot in 2nd post. cell.	Present, but lengthened.
D.	Very small, almost vanished.	Quite separate, that at end of 1st post. cell of usual shape, that at end of submarg. small and triangular.	Absent.	Absent.	Present.
E.	Present.	Almost as in type.	Absent.	A very small spot present.	Absent.
F.	Absent.	Almost as in type.	Absent.	Absent.	Quite small.
					Small.

advisable that before any breaking up of the group is considered a general review of the species should be undertaken.

Ensina barnardi Bezzi, 1924.

In addition to the two females seen by Bezzi, his type and another specimen, there are a few other specimens also from South-West Africa: Windhoek, December 1919, R. W. Tucker; Otjiverongo, February 1920, R. W. Tucker; and Kamanyab, February 1925, Mus. Exp. The species seems to be fairly common in South-West Africa.

A comparison of the type and other specimens with the description calls for the following remarks:—

The proboscis, which Bezzi states to be "about as long as the entire body," is actually only slightly longer than the thorax, or about twice as long as the head. The first basal cell is stated to be unspotted; in both specimens seen by Bezzi, however, there is a small, rather inconspicuous, spot in the outer part of the cell; in seven other specimens the first basal cell is quite unspotted, two have a small spot, and in four the spot is quite conspicuous. As regards the coloration of the body, the thorax and scutellum are so heavily grey-dusted as to appear whitish, except the margins of the scutellum which are blacker. The abdomen is only slightly grey-dusted and, compared to the thorax, distinctly blackish.

The undescribed male is similar to the female. The genitalia are shining black.

Ensina mecistocephala, n. sp.

(Plate I, fig. 9, wing.)

Very similar to *Ensina barnardi* Bez. in size and wing pattern, but with a much more elongated head.

♂. Length of body and of wing, 4.5 mm. Head much depressed and very elongate wedge-shaped, three-quarters as high as long; eyes oval, with long axis directed backwards; peristome very prominent, projecting beyond outer edge of antennae by a distance equal to the width of the third antennal joint; yellowish, with a blackish mark below face. Face narrow, strongly incurved owing to prolongation of peristome; yellow on sides, with a dark brown median stripe. Parafacials very wide, twice as wide as width of third antennal joint, yellow, but broadly blackish towards eye, and with a deep brown, kidney-shaped, longitudinal spot at top. Frons

long and narrow, with parallel sides, slightly hollowed, twice as long as wide; yellow and narrowly grey on sides anteriorly, posteriorly broadly grey on sides, yellow centrally, with a narrow dark median stripe; vertex, including ocellar dot, grey. Lunule large, but relatively smaller than in *Ensina reticulata* n. sp., depressed, dark brownish with black centre, covered with fine grey dust. Antennae not quite as long as face; all joints brownish, as is thickened basal fourth of arista, terminal portion of arista darker; third joint of antenna rounded apically. Palpi narrow, flat, not spatulate, extending well beyond peristome. Proboscis with basal portion blackish and as long as head; apical portion yellow, and about one-seventh longer than basal. Chaetotaxy: three inferior orbitals, verticals and lower pair of superior orbitals brown; upper pair of superior orbitals, post-verticals, and occipitals white (most of the occipitals are missing in the specimen); bristles and hairs on lower parts of head white.

Thorax and scutellum entirely dull black, except humeri, base of wings, and a small spot between, yellowish. Dorso-centrals on line of anterior supra-alars; praescutellars present. It is to be noted that the specimen is rather damaged and had become greasy; the dull black appearance of the thorax is due to this; after a comparison with fresh and greasy specimens of *Ensina barnardi* Bez. it is most probable that in this species, too, both thorax and scutellum are normally covered with thick grey dust, with probably three more or less fuscous longitudinal lines on the dorsum of the thorax. The thorax and scutellum have also been denuded of most of the white pubescence. On the scutellum were four bristles, all probably of equal length. Halteres yellow. Legs with the coxae brownish black; all femora black except on distal ends yellow, least yellow on front femora; all tibiae brownish yellow and tarsi yellow. Wing very similar in pattern to that of *Ensina barnardi* Bez., but blacker and with hyaline spots small. Base of wing from stigma to outer end of anal cell hyaline; stigma yellow, brownish at outer end; two triangular, adjacent, hyaline spots next to stigma, the apex of inner reaching second vein, of outer not quite; a fair-sized spot near end of marginal cell; submarginal cell subhyaline brownish at base, otherwise unspotted except for ends of costal indentations noted; first basal cell unspotted; first posterior cell with two small hyaline spots, one about inner third midway between veins and one touching fourth vein at outer third; immediately above this, touching the third vein, is another spot which is only just perceptibly hyaline; discal

cell with three small round spots—one touching fourth vein at inner quarter, one just above fifth vein about middle, and one at outer quarter about midway between the longitudinal veins; second posterior cell with a small irregular, and two larger, marginal indentations; third posterior and axillary cells together with a wide, two-pointed, marginal indentation, which has a dark spot about its middle on wing margin; anterior cross-vein about its own length from lower, and each narrowly edged with subhyaline yellowish; lower angle of anal cell acute.

Abdomen and genitalia black, rather shining, with very slight indication of grey dust.

Type ♂, a single specimen from Koabendus, S.W.A., January 1926, Mus. Exp.

Ensina reticulata, n. sp.

(Plate I, fig. 10, wing.)

Closely allied to both *Ensina barnardi* Bez. and *Ensina mecistocephala*, n. sp., especially in the peculiar elongation of the head, but differing in having a typical *Ensina*-like reticulate wing pattern.

♂♀. Length of body, 4.5 mm.; of wing, 4.3 mm.; of ovipositor, 1.0 mm. Head much depressed and elongate, wedge-shaped, not quite twice as long as high; eyes oval, long axis directed backwards; mouth border very prominent, channel-like, but hardly projecting beyond line of outer edge of antennae; face narrow, whitish; parafacials as broad as third antennal joint, whitish but with a subtranslucent, blackish spot near middle and a brown, elongate spot at top; peristomalium whitish; frons elongate, with parallel sides, not quite one and a half times as long as wide, flat, yellow centrally in front, with some very fine golden pubescence, slightly blackish grey at sides and behind, ocellar dot black; lunule very large, grey, swollen; occiput yellow, broadly black in centre; antennae as long as face, first two joints yellowish, third reddish, second joint prominent, third rounded apically; arista with thickened basal fourth yellowish, distal three-fourth brown and very finely pubescent; palpi flattened, narrow, projecting slightly beyond mouth border; proboscis yellowish, long, about twice as long as head, the terminal portion being as long as the basal; bristles on occiput thick and white, yellowish on lower side of head, remainder brown.

Thorax elongate, with five longitudinal fuscous stripes separated by grey. The two lateral lines extend from humeri above wing bases and end rather diffusely on scutellum; the three median lines converge

before reaching scutellum; bristles brownish, and on dorsum are situated on the longitudinal lines where the alveoli are ring-like, and are surrounded by small brown areas; pubescence white; dorso-centrals on line of anterior supra-alars. Scutellum greyish centrally, more fuscous laterally; with four brownish bristles of equal length. Pleura and sterna blackish, with rather sparse white pubescence and some longish, flattened, white hairs on humeri and propleura. Mesophragma blackish. Legs entirely yellow except dark spots near extremity of middle and hind femora.

It is to be noted that the male type is greasy and the thick dust on dorsum has disappeared. The dorsum is dull black, the rest of the thorax is dull, rather dark, yellow. The scutellum, except extreme dull black base, is also yellow.

In the female type the abdomen, except the last segment, is dull reddish yellow, darker on anterior half, and with a more or less well-defined, median, darkish line; pubescence golden; last segment shining reddish yellow, with the pubescence very fine medially. Ovipositor shining black, triangular, as long as last three segments, with blackish pubescence. In the damaged male type the abdomen seems to have been covered with thick dust rather more greyish than in the female. The denuded portions of the abdomen are reddish, the anterior and posterior margins of the segments blackish; with short yellow pubescence; on the posterior margin of last segment are a few thin bristles; genitalia rather shining yellow.

Wing: cross-veins rather approximated, the upper its own length from the lower; third and fourth veins strongly convergent towards apex of wing; veins pale yellowish, but darkened where markings touch them; pattern reticulate, narrow, and pale; stigma black, with broad yellow subhyaline spot at inner third; the reticulation of the discoidal cell is well marked.

Types ♂ and ♀, Zesfontein, S.W.A., February 1925, Mus. Exp.

Ensina sororcula Wiedemann, 1830.

Numerous specimens from Kaoko Otavi, S.W.A., March 1926, Mus. Exp.; Warmbad, S.W.A., February 1926, Mus. Exp.; and a couple from Mulange, Uganda, November 1922, R. Dummer.

Ensina gladiatoria Bezzi, 1920.

There are several specimens from Tradouw Pass, Swellendam district, November 1925, Mus. Exp., and one from Zesfontein,

S.W.A., February 1925, Mus. Exp., which I refer to this species. It seems, however, that this and *Ensina liliputiana* Bez. may be only varieties of one species, *E. liliputiana* being the smaller and darker.

The wing pattern in *E. gladiatrix* shows some variation: the hyaline spot at the end of the first posterior cell is often confluent with the one before it in the same cell and with the ones above and below it.

Ensina liliputiana Bezzi, 1924.

Two specimens from Tradouw Pass, Swellendam district, November 1925, Mus. Exp., may be placed here. They are very similar to some of the specimens of *Ensina gladiatrix* Bez. recorded from the same locality, but the hind tibiae are distinctly blackened, although not quite as much as is the case in the type specimens. Further, they are rather larger than the types.

Ensina hyalipennis Bezzi, 1924.

There are several specimens of this species from Tradouw Pass, Swellendam district, November 1925, Mus. Exp., and a pair from Kaoko Otavi, S.W.A., March 1926, Mus. Exp.

In comparing the type specimen with the description, it is difficult to understand the reference to the length of the proboscis being as "long as the body"; from actual measurements, the length of the body, 2.5 mm., given in the description, is found to be the extreme length from the front of the head to the end of the ovipositor. Further measurements show that the proboscis is two-thirds the length of the body, or not quite three times the length of the head. The body and wing lengths are approximately equal, but the body is often difficult to measure owing to its bent position. Wing lengths vary from 2.3 mm. to 3.4 mm.

In some specimens the frons and lunule are yellow, but this seems to be due to discoloration. The abdomen, both in the type and in other specimens, is shining black with rather long, pale yellowish pubescence as stated by Bezzi.

The undescribed male is similar to the female. The genitalia are rather dull black.

Ensina anceps Loew, 1861, and var. *fasciolata* Bezzi, 1924.

Two specimens from Kaoko Otavi, March 1926, Mus. Exp., belong to the *anceps* form, that is, there are three hyaline spots in the marginal

cell beyond the stigma. Three from Tradouw Pass, Swellendam, November 1925, Mus. Exp., and one from French Hoek, December 1917, K. H. Barnard, belong to the form *fasciolata* Bez., having only two hyaline spots in the cell mentioned.

For reasons similar to those stated under *Ensina ignobilis* (Lw.) it does not seem that the separation of *fasciolata* as a variety is justified.

Ensina myiopitoides Bezzi, 1908.

There is a specimen from Kamanyab, S.W.A., March 1925, Mus. Exp., and three from Matroosberg, 3500 ft., Ceres district, November 1917, Lightfoot.

The species is variable in size, wing lengths varying from 2.1 mm. to 3.3 mm.

Ensina ignobilis Loew, 1861, and var. *plebeja* Bezzi, 1924.

Among numerous specimens collected by the Museum Expedition in the Tradouw Pass, Swellendam district, in November 1925, it is interesting to note that only one or two have the stigma spotted, that is, the majority belong to the species *ignobilis* Lw., and not to Bezzi's variety *plebeja*. A few specimens, however, from South-West Africa (Warmbad, February 1925; Kaoko Otavi, March 1925, Mus. Exp.) have all the stigma spotted and so belong to the variety (*cf.* Munro, Entomology Memoir, Union Dept. of Agric., No. 5, 1926, p. 26).

From a consideration of this material and of many specimens in my own collection, it hardly seems that the separation of the variety *plebeja* on account of the spotted stigma is justified. The species (*ignobilis* Lw., s. l.) is one that shows great instability, both as regards wing pattern and also in the intensity of the coloration of the pattern.

Typically the wing pattern is reticulate and covers the outer two-thirds of the wing surface; the markings are fainter and less defined in the discoidal and third posterior cells; the hyaline spots are rounded, but vary individually very much in size, tending to become confluent. Points to be remarked are that in the marginal cell, beyond the brown spot below the stigma, there are, as a rule, three hyaline spots, but occasionally four or only two; the hyaline spot at the outer end of the first posterior cell is practically constant in all specimens; the stigma is the darkest part of the wing and may be almost black, the spot may be quite small, or cover almost half the area of the stigma, while further, as noted by Bezzi, it may be absent

on one wing and present on the other of the same specimen; the inner corner of the stigma is more often than not hyaline.

The main line in the reduction of the pattern, as shown in several specimens, is in the confluence of the hyaline spots with those above and below in adjacent cells, resulting in the wing becoming more or less banded in appearance, but the bands are never so clearly defined as those on the wings of *Ensina anceps* Lw.—the fact that the spots have coalesced is always apparent. In two or three specimens the reduction of the pattern and of the intensity of the coloration have proceeded so far that the wing resembles that of *Ensina sororcula* (Wd.).

In the majority of the specimens the femora are black, except for the extreme distal ends, but in a few the black is more restricted.

It may thus be concluded that only one variable species is under consideration; a closer study, however, especially a comparison of allied species, may reveal facts necessitating a revision of this conclusion.

Ensina hieroglyphica Bezzi, 1924.

One specimen from Swellendam, October 1925, K. H. Barnard.

Sphenella marginata Fallen, 1820, and var.
melanostigma Bezzi, 1908.

Of this widespread species there are a few specimens from Tradouw Pass, Swellendam district, November 1925, Mus. Exp.

I am unable to regard *melanostigma* Bez. as more than a variety of *marginata* Fall., if indeed it is not but little more than a variation. In the present material some of the specimens have the stigma entirely black, but the apical black spot in most has a distinct tooth; it is remarkable that, in spite of the fewness of the specimens, they show quite a wide range from spotted to unspotted stigma and toothed to untoothed apical fuscous band.

Sphenella nigricornis Bezzi, 1924.

There is a single male specimen from Willowvale, Cape, 6.1.17.

With regard to the description of the type, it may be noted that the frons is as long as width at vertex, and not twice as long as broad.

Euribia praetexta Loew, 1861.

There is a single specimen from Mulange, Uganda, November 1922, R. Dummer.

Euribia caffra Loew, 1861.

This species, together with *Euribia dissoluta* (Lw.), *Euribia tristrigata* Bez., and *Euribia cyana* (Walk.), seem to be variations of one species. Without, however, much more material and more detailed anatomical studies it is not possible to make any definite decision. The species are distinguished on differences in wing pattern, but, as is the case with various groups of *Ensina*, etc., the wing pattern is very inconstant.

According to Bezzi's tables (Bulletin of Entomological Research, vol. xv, p. 138) *Euribia caffra* is the form in which the markings on the wings are arranged so that there is a more or less definite band across the middle of the wing, and the hyaline spot at the end of the first posterior cell is small ("much narrower than the space between the third and fourth longitudinal veins"—Bezzi). Specimens in my own collection, and one in the South African Museum collection determined by Bezzi, show this spot nearly as wide as the space mentioned. The band across the wing is, as a rule, well defined, especially when examined with the naked eye.

There is a specimen from Mulange, Uganda, November 1922, R. Dummer, which is a typical *Euribia caffra* (Lw.).

Euribia tristrigata Bezzi.

Of specimens that may be referred to this species I have only seen five. There are three in the present material—one from Durban, September 1920, C. P. van der Merwe; one from Kaoko Otavi, S.W.A., March 1926, Mus. Exp.; and one from Mulange, Uganda, November 1922, R. Dummer.

It is, therefore, not possible to judge much of the wing-pattern variation, nor to compare them with typical *Euribia caffra* wings. In all there is a band across the wing, especially on naked-eye examination, but it is much less definite than in *caffra*. The spot at the end of the first posterior cell in the Durban and Kaoko Otavi specimens is large, touching both the third and fourth veins. In the Uganda specimen the spot, while large, does not reach either vein. It should be noted further that the Uganda and Kaoko Otavi specimens might

well be regarded as *Euribia dissoluta* Lw., as the stripes on the dorsum of the thorax are practically absent. The appearance of the stripes on the thorax depends on the state of preservation of the specimen. Loew (Berl. Ent. Zeitschr., vol. v, p. 291, 1861) states "Die Oberseite des Thorax nur mit einer sehr undeutlichen Spur von Längslinien" in the case of *dissoluta*, while, in his description of *tristrigata*, Bezzi (Bull. Ent. Res., vol. ix, p. 37, 1918) says, "On the back (of thorax) there are three well-marked longitudinal stripes." In this connection it is interesting to note that an examination of a series of *Euribia caffra* (Lw.) shows that in fresh, well-preserved specimens there are also three similar longitudinal stripes on the dorsum of the thorax; for some reason, however, specimens tend to become greasy, and then the lines practically disappear, or are difficult to see except anteriorly. It is inferred, therefore, that Loew happened to have a badly preserved specimen, but definite information could only be obtained from an examination of the type if it is still in existence.

There does not seem to be any other character except the thoracic stripes on which to separate *dissoluta* Lw. and *tristrigata* Bez. It may be noted that Bezzi (Ann. S.A. Mus., vol. xix, p. 558, 1924) actually saw no specimens he could consider to be *dissoluta* Lw., but considered his *tristrigata* might only be a form of it.

Acanthiophilus hessei, n. sp.

(Plate I, fig. 11, wing.)

A distinct species with a well-defined, dimidiate, reticulate wing pattern.

♂♀. Length of body and of wing, 3.0 to 3.4 mm. in males and 3.7 to 3.8 mm. in females. Head shorter and wider than high, yellow, occiput black centrally; frons narrowed in front, rather more so in male than in female, as long as wide at vertex, yellow in front and centrally with paler yellow margin round lunule, posterior corners broadly darker yellow; ocellar dot blackish; slight yellow pubescence in middle anteriorly, and a line along sides of frons; lunule wide, yellow, with its margins marked with sharply impressed lines. Chaetotaxy: postverticals, upper superior orbitals, occipitals, and hairs on lower side of head yellow; verticals, ocellars, lower pair of superior orbitals, and the two pairs of lower orbitals, black. Antennae as long as face, rather darker yellow than head, third joint broadly rounded at end. Proboscis yellow, short, geniculate, distal portion two-thirds length of basal; palpi short, flat.

Thorax with dorsum rather shining black, but normally covered with thick yellow dust, together with closely set white pubescence. Bristles black; dorso-centrals before line of anterior supra-alars. Pleura and sterna black, except yellowish wing bases, with less grey dust, and less, but often longer, white pubescence, than on dorsum. Pteropleural bristles whitish. Halteres yellow. Scutellum flat, shining yellow, with very fine yellow dust, some short yellow pubescence, and four black bristles of equal length. Mesophragma black with fine grey dust.

Abdomen in the male rather shining black, finely grey-dusted, with narrow yellow posterior margins to segments—yellow margins wider on venter; white pubescence and a few dark bristles on posterior margin of last segment. Genitalia large, rounded, as wide as posterior margin of last segment and visible from above; shining black with slight white pubescence. In the female the abdomen is covered with yellow or white pubescence, which is longer on posterior margins of segments and is darkened on posterior margin of last segment. The first segment is black with yellow posterior edge, but more or less thickly covered with yellow dust; second segment with yellow posterior margin and more or less thickly covered with yellow dust on sides only; third and fourth segments black with yellow posterior margins; fifth segment with yellow posterior margin wider, almost half the width of the segment; all the black on the abdomen is finely covered with grey dust. Ovipositor trapezoidal, short—only slightly longer than last segment, shining black with white pubescence on basal portion and fine black pubescence on distal portion. Venter blackish with short yellow pubescence.

Wings strongly dimidiate, having a rather pale but well-marked brown pattern restricted to above the fourth vein from base to apex; below this vein there is a slight reticulation at the end of the discoidal cell, and odd brown spots in the third posterior cell. The pattern is reticulate with numerous rather small hyaline spots arranged conspicuously along adjacent sides of veins. Stigma black, but with a large yellow spot at outer third, and the base yellow to a greater or less extent.

Type ♂ and ♀ and some other specimens from Tradouw Pass, Swellendam district, November 1925, Mus. Exp.

Trypanea peregrina (Adams, 1905).

There is one specimen from Kamanyab, S.W.A., March 1925, Mus. Exp.

Trypanea bulligera Bezzi, 1924.

There are specimens of both sexes from the type locality, Great Winterhoek, Tulbagh, April 1916, R. M. Lightfoot; one from French Hoek, December 1917, K. H. Barnard; and one from Tradouw Pass, Swellendam district, November 1925, Mus. Exp.

A comparison of Bezzi's type female with the specimens of females represented here reveals the fact that he has inadvertently described the female of his *Trypanea euarestina* as the female of *Trypanea bulligera* (Ann. S.A. Mus., vol. xix, pp. 563-564, 1924). In the genuine females of *T. bulligera* there is an identical "bulla" as is present on the wing of the male. The error seems to have arisen owing to the fact that occasionally two or three specimens—often of different species—were pinned on one mount; in this case a male *bulligera* and a female *euarestina* had been placed together. It is perhaps wise not to pin more than one specimen on a single mount unless it is a pair actually taken *in copula*, a fact which Bezzi evidently assumed in the present instance.

With regard to the male the following additional notes are given: The frons is only a little longer than wide (9 : 8), and not one and a half times as long as wide as stated by Bezzi. In some specimens there is a faint median greyish stripe on the frons. The abdomen is only covered with cinereous dust on the first segment, the remainder are more shining black with very little dust. In the wing the third vein is curved *forward* just *above* the "bulla."

The characters of the female are: Length of body and of wing, 3.6 to 4.0 mm. The frons is a little longer than broad (10 : 8), and thus a little narrower proportionately than in the male; it is yellow with a wide, distinct, median, grey-dusted stripe, narrowing from the blackish ocellar dot, which is also grey-dusted, to the lunule; sides of frons grey-dusted, and appearing shining white from certain angles, especially from behind. The abdomen has cinereous dust on first segment, the remainder being rather dull shining black with slight dust. Pubescence white. Venter more reddish. Ovipositor shining black with white pubescence; rather narrowed, with rounded end, and as long as last two segments. Legs as in male. Wings as in male, that is, there is also present a peculiar rounded "bulla" just before the middle of the first posterior cell, and the third vein is curved forward just above the bulla. The cross-veins are close, being less than the length of the upper apart; lower angle of anal cell is rectangular. Wing pattern as in male.

Trypanea euarestina Bezzi, 1924.

(Plate I, fig. 12, wing.)

Trypanea bulligera Bez., female (Ann. S.A. Mus., vol. xix, p. 563, 1924).

Very like *Trypanea bulligera* Bez., but differing by the absence in both sexes of the peculiar bulla on the wing. There are several specimens of both sexes from Winterhoek (3600-3800 ft.), Tulbagh, April 1916, R. M. Lightfoot.

As the type specimen is in very poor condition the following notes, on both sexes, have been made, apart from the fact that the female was described by Bezzi as the female of *Trypanea bulligera*.

♂♀. The antennae are shorter than the face; palpi short, thick, flattened, and curved; the basal portion of the proboscis is longer than the mouth, and the apical shorter than the basal. The abdomen is shining black, and wholly grey-dusted, but less densely than on the thorax, and with white pubescence. The wing is very similar to that of *T. bulligera*, but, as stated above, the bulla is absent in both sexes and the third vein straight; the cross-veins are a little more than the length of the upper apart, and the lower angle of the anal cell is distinctly acute; the wing pattern is also very similar to that of *T. bulligera*, but the stigma is slightly infuscated along the costa, and the bar across the discoidal cell is not prolonged beyond the fifth vein in any of the specimens examined. Genitalia black. Ovipositor shining black, flattened, and as long as the last three segments.

With regard to Bezzi's figure of the wing of this species (Ann. S.A. Mus., vol. xix, 1924, pl. xv, fig. 121) it is to be regretted that it is drawn rather out of proportion; a fresh drawing is given here.

Trypanea luctans, n. sp.

(Plate I, fig. 13, wing.)

Very similar to both *Trypanea bulligera* Bez. and *Trypanea euarestina* Bez. in wing pattern; it differs from *T. bulligera* in the absence of the bulla on the wing, and from *T. euarestina* in having the lower angle of the anal cell a right angle.

♀. Length of body, with ovipositor, 3.5 mm.; of wing, 3.0 mm.; of ovipositor, 0.8 mm. Head pale yellow; frons slightly longer than broad, flat, with parallel sides, yellow centrally and in front, greyish behind and with grey margins; ocellar dot blackish; lunule yellow. Epistome slightly projecting, mouth wide; proboscis rather darker

yellow, geniculate, basal portion as long as mouth, apical half length of basal; occiput black centrally, yellow on sides. Antennae rather darker yellow, shorter than face, third joint broad and rounded. Chaetotaxy: two pairs of lower orbitals, lower pair of superior orbitals, ocellars, verticals, and genal black; upper pair of superior orbitals, occipitals, and hairs on lower part of head white.

Thorax: dorsum bluish black with cinereous dust, except humeri yellowish; rather sparse white pubescence and black bristles; dorso-centrals much before line of anterior supra-alars. Pleura and sterna bluish black with some yellow dust and yellow pubescence. Scutellum as thorax; with two bristles. Legs entirely yellow. Wings: distance between ends of first and second veins relatively much shorter than same distance in both *T. bulligera* and *T. euarestina*; cross-veins approximated, being less than the length of the upper cross-vein apart; lower angle of anal cell a right angle; costal bristle double. Wing pattern of same type as in *T. bulligera* and *T. euarestina*, that is, stigma broadly united to dark pattern which extends well towards base of wing. The apical fork is complete; two streaks extend across second posterior cell—one along lower cross-vein and one across outer end of discoidal cell—all reaching margin of wing. At end of submarginal cell are two marginal hyaline indentations, and two along costa into marginal cell, the one next to the stigma being relatively much shorter than the corresponding mark on the wing of the two species already mentioned; stigma broadly infuscated along costa, and discoidal cell broadly infuscated along its upper half. Abdomen shining black, somewhat dusted with bluish cinereous basally and with black pubescence; venter rather dull black. Ovipositor shining black, with black pubescence; flat; rather longer than last two segments.

Type ♀ from Matroosberg, 3500 ft., Ceres district, November 1917, R. M. Lightfoot.

Trypanea confluens (Wiedemann, 1830).

Of this common species there are a few specimens from Kaoko Otavi, S.W.A., March 1925, Mus. Exp.; one from the Hoarusib River (Otshu), March 1926, Mus. Exp.; and one from Tradouw Pass, Swellendam district, November 1925, Mus. Exp.

Trypanea woodi Bezzi, 1924.

There is a male from Kaoko Otavi, S.W.A., March 1926, Mus. Exp.

Trypanea amoena (Frauenfeld, 1856).

A single female specimen from the Hoarusib River (Otshu), S.W.A., March 1926, Mus. Exp., appears to be this European species. The specimen is unfortunately rather damaged, but the wing pattern is practically identical with the figure given by Bezzi in the Memoirs of the Indian Museum, vol. iii, pl. x, fig. 70, except that the stigma is yellowish hyaline, with a dark spot on the costa at the end of the axillary vein. Further, a comparison with European specimens reveals the same slight difference.

Trypanea amoena (Fr.) is widespread throughout Europe and the entire Oriental Region as far as the Philippines. It is common in Egypt, and has been recorded by Bezzi from Erythrea.

Trypanea superdecora Bezzi, 1924.

There is a single specimen from Kaoko Otavi, March 1926, Mus. Exp.

Trypanea bisreducta Bezzi, 1924.

Three specimens from Kaoko Otavi, S.W.A., March 1926, Mus. Exp., agree with the type in the reduced pattern, with only a rudimentary tooth projecting into the second posterior cell. A specimen from Zesfontein, S.W.A., February 1925, Mus. Exp., has two short, but distinct, rays into the second posterior cell, and in this it agrees with a specimen in my collection determined as *bisreducta* by Bezzi, but it may be noted that they apparently run down to *aira* (Walk.) in Bezzi's tables on pages 141-143 of vol. xv of the Bulletin of Entomological Research. It may be suggested here that not only *bisreducta* Bez. and *aira* (Walk.) but also *stellata* (Füssl.) are forms of one species. No definite statement can, however, be made without adequate material for study.

Two further specimens from Tradouw Pass, Swellendam district, November 1925, Mus. Exp., are also referred here, and they agree with a specimen in my collection which Bezzi considered as probably *bisreducta*. They differ from the type in having the black spot at the end of the wing larger and more intense black; the short streaks radiating from it are thicker, so that there is a complete hyaline spot opposite the top end of the lower cross-vein. Further, there is a short, broad tooth projecting into the second posterior cell, and in one specimen this encloses a hyaline dot. In my specimens, and in one

from Tradouw Pass, there are no hyaline dots on the black, but in the other Tradouw Pass material there is a small hyaline dot at the top just below the end of the marginal cell. There are no structural differences in the wing venation in the various specimens.

Trypanea maculaminuta, n. sp.

(Plate I, fig. 14, wing.)

The species is characterised by the extreme reduction of the apical spot on the wing, which is otherwise quite hyaline. It is much like the European *Trypanea eluta* (Meig.) in appearance, but is distinguished by having only two scutellar bristles.

♂♀. Head pale yellow; eyes large, rounded; occiput yellow with central black spot; mouth large, round, mouth border slightly projecting; palpi and proboscis short, labellae large; face narrow; antennae not quite as long as face, third joint darker yellow, with sharp upper angle; frons about one and a half times as long as wide at vertex, rather narrowed in front, yellow centrally with broad grey border and grey ocellar dot; three inferior orbitals; occipital bristles white, other bristles brownish; lunule yellow.

Thorax, scutellum, and abdomen covered with blue-grey dust and white pubescence; humeri yellowish; bristles brownish, dorso-centrals before line of anterior supra-alars; scutellum with two long bristles. Halteres white. Legs yellow, front femora swollen and with a row of yellow bristles.

Ovipositor shining black, triangular, rather longer than last two segments; with white pubescence.

Wings with normal venation; cross-veins slightly farther apart than length of upper. Hyaline with greatly reduced pattern; stigma slightly infuscated along costa, or more or less wholly, but faintly, infuscated; costa dark along basal half of stigma; upper and lower cross-veins darkened; a faint dark bar at middle of distance between ends of second and third veins extends in female type across marginal cell, and in male type and other specimens across submarginal cell as well; the infuscated spot at apex of wing covers the end of the marginal cell for one-third of the distance between ends of second and third veins, extends across submarginal cell and one-third of way across first posterior cell, where it narrows abruptly before continuing to fourth vein; on the inner side of this narrowed portion is a half-enclosed hyaline spot; in one specimen there is a ray to the top of lower cross-vein which practically encloses this spot. The costa is



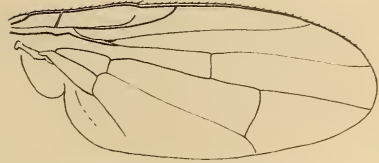
1. *Rhacoclaena permagna* Mro.



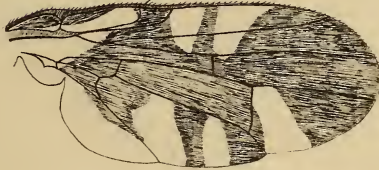
2. *Terellia nigrofemorata* Mro.



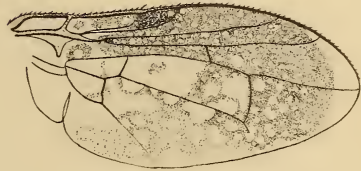
3. *Terellia xanthochaeta* Mro.



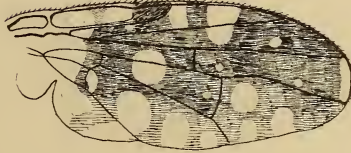
4. *Terellia complanata* Mro.



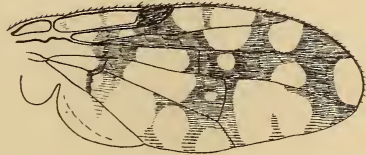
5. *Aciura longulior* Mro.



6. *Leucothrix barbata* Mro.



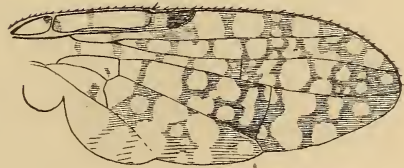
7. *Spathulina semirufa* Bez.



8. *Spathulina superhyalina* Mro.



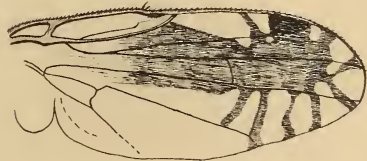
9. *Ensina mecistocephala* Mro.



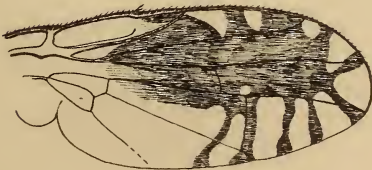
10. *Ensina reticulata* Mro.



11. *Acanthiophilus hessei* Mro.



12. *Trypanea euarestina* Bez.



13. *Trypanea luctans* Mro.



14. *Trypanea maculaminuta* Mro.

SOUTH AFRICAN TRYPETID DIPTERA.

darkened from the infuscation at the end of the marginal cell to the end of the fourth vein. In some specimens the intensity of the infuscation is so reduced as to be only just discernible, and the terminal spot is reduced to more or less slightly infuscated spots between the veins.

Type ♂ and ♀ and some other specimens from Warmbad, S.W.A., February 1925, and one specimen from Kaoko Otavi, March 1926, Mus. Exp.

Trypanea decora (Loew, 1861).

There are three typical specimens from Tradouw Pass, Swellendam district, November 1925, Mus. Exp.

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